

	P.E.S. COLLEGE OF ENGINEERING (AN AUTONOMOUS INSTITUTE) CHH. SAMBHAJINAGAR-431002 Summer Examination – 2026 Course: F.Y.B. Tech. Branch : ALL Semester : II Subject Code & Name: BTPESB104 & Basic Electrical Engineering Max Marks: 30 Date: 07/07/2026 Duration: 2 Hr.			
	Instructions to the Students: 1. All the questions are compulsory. 2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question. 3. Use of non-programmable scientific calculators is allowed. 4. Assume suitable data wherever necessary and mention it clearly.			
		(Level/CO)	Marks	
Q. 1	Solve Any five of the following.		2X5=10	
A)	Kirchoffs law – 1 Mark with example-- 1 Mark	K2/CO1	2	
B)	Draw impedance triangle –1Mark phasor diagram– 1 Mark	K4/CO2	2	
C)	Find the currents I_1 & I_2 IN Parallel circuits -1 Mark for each	K3/CO1	2	
D)	Define 1)amplitude 2)instantaneous value 3)cycle 4)frequency with reference AC Signals. Define terms each -0.5 Marks	K4//CO2	2	
E)	Average value of sinusoidal ac circuit. Definition – 1 Mark waveform - 1 mark	K3/CO2	2	
F)	Define terms form factor & peak factor Form factor definition / formula – 1 mark Peak factor definition / formula – 1 mark	K3/CO2	2	
G)	Define i) charge ii) electric current correct definitions – 2 marks (1 mark each)	K2/CO1	2	
Q.2	Solve Any Two of the following.		10	
A)	State the steps to solve the Thevenins Theorem Statement-2 marks Correct steps (any five) –3 marks		5	

B)	An alternating voltage is given by $V=230\sin 314t$. Calculate i) frequency ii) maximum value iii) average value iv) RMS value - Frequency calculation – 1 mark - Maximum value – 1 mark - Average value – 1 mark - RMS value – 1 mark - Proper formula & substitution – 1 mark	K3/CO1	5
C)	State & Explain electrical safety Rules Any five correct rules – 5 marks (1 mark each)	K4/CO3	5
Q. 3	Solve Any Two of the following.	K2/CO3	10
A)	What is RMS value of an AC quantity ? obtain expression for the RMS value of a sinusoidal current in terms of its Maximum value. RMS Value of AC - Definition – 1 mark - Mathematical expression – 2 marks Final relation Maximum value & RMS Value – 2 marks	K4/CO2	5
B)	Using Nodal Analysis find V_1. - Selection of reference node – 1 mark - KCL equation – 2 marks - Correct solution of V_1 – 2 marks	K2/CO1	5
C)	Describe single core, two core, and. - Single core wire – $2\frac{1}{2}$ marks - Two core wire – $2\frac{1}{2}$ marks	K2/CO3	5
*** End ***			